

**Listing of Claims:**

1. (Previously Presented) A method for optimizing leaf comparisons from a tree search of data stored in a tree structure within external memory of an embedded processing system, the method comprising:  
  
providing a control structure for leaf data comparisons, the control structure including as a control vector and a match key, the control vector indicating a type of comparison test to be performed on the match key; and  
  
storing the control structure including the control vector and the match key within a leaf of the tree structure.
2. (Previously Presented) The method of claim 1, wherein the control vector further comprises a control setting that indicates a type of comparison test to be performed on a pre-determined portion of the match key.
3. (Previously Presented) The method of claim 2, wherein the control setting further comprises a two-bit value that indicates a type of comparison test to be performed on a byte of the match key.
4. (Original) The method of claim 2, further comprising providing the control structure in a fixed size block of memory.
5. (Original) The method of claim 4, further comprising allowing storage of additional data in the fixed size block of memory following the control structure.

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6. (Previously Presented) The method of claim 2, wherein the control vector further comprises a control setting to indicate a masked compare test is to be performed, a masked compare test being a don't care comparison test.

7. (Original) The method of claim 6, wherein the match key further comprises a mask pattern and key value for the masked compare test.

8. (Previously Presented) The method of claim 2, wherein the control vector further comprises a control setting to indicate a range compare test is to be performed, a range compare test being a comparison test that matches a value to a pre-determined range of values.

9. (Previously Presented) The method of claim 8, wherein the match key further comprises maximum and minimum values of the pre-determined range of values for the range compare test.

10. (Previously Presented) An embedded processing system for optimizing leaf comparisons from a tree search, the embedded processing system comprising:  
an embedded processor, the embedded processor including a tree search engine; and  
external memory coupled to the embedded processor, wherein the tree search engine performs comparisons on leaf data in a tree structure within the external memory according to a control structure, the control structure comprising a control vector and match key and being stored within a leaf of the tree structure, wherein the control vector indicates a type of comparison test to be performed on the match key.

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11. (Previously Presented) The embedded processing system of claim 10, wherein the control vector further comprises a control setting that indicates a type of comparison test to be performed on a pre-determined portion of the match key.
12. (Previously Presented) The embedded processing system of claim 11, wherein the control setting further comprises a two-bit value that indicates a type of comparison test to be performed on a byte of the match key.
13. (Original) The embedded processing system of claim 10, wherein the external memory comprises fixed sized blocks for storing the control structure.
14. (Original) The embedded processing system of claim 13, wherein the external memory further stores additional data in the fixed size block of memory following the control structure.
15. (Previously Presented) The embedded processing system of claim 11, wherein the control vector further comprises a control setting to indicate a masked compare test is to be performed, a masked compare test being a don't care comparison test.
16. (Original) The embedded processing system of claim 15, wherein the match key further comprises a mask pattern and key value for the masked compare test.
17. (Previously Presented) The embedded processing system of claim 11, wherein the control vector further comprises a control setting to indicate a range compare test is to be

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performed, a range compare test being a comparison test that matches a value to a pre-determined range of values.

18. (Previously Presented) The embedded processing system of claim 17, wherein the match key further comprises maximum and minimum values of the pre-determined range of values for the range compare test.

19. (Previously Presented) A method for optimizing leaf comparisons of a tree search, the method comprising:

storing leaf data in a leaf of a tree structure in external DRAM of an embedded processing system;

organizing the leaf data within fixed size blocks of memory in the external DRAM as a control vector and match key; and

utilizing the control vector to indicate a type of comparison to be performed on the match key within the leaf data by a tree search engine of the embedded processing system.

20. (Previously Presented) The method of claim 19, wherein the control vector further comprises a control setting that indicates a type of comparison test to be performed on a pre-determined portion of the match key.

21. (Previously Presented) The method of claim 20, wherein the control setting further comprises a two-bit value that indicates a type of comparison test to be performed on a byte of the match key.

22. (Previously Presented) The method of claim 20, wherein the control vector further comprises a control setting to indicate a masked compare test is to be performed, a masked compare test being a don't care comparison test.

23. (Original) The method of claim 22, wherein the match key further comprises a mask pattern and key value for the masked compare test.

24. (Previously Presented) The method of claim 20, wherein the control vector further comprises a control setting to indicate a range compare test is to be performed, a range compare test being a comparison test that matches a value to a pre-determined range of values.

25. (Previously Presented) The method of claim 24, wherein the match key further comprises maximum and minimum values of the pre-determined range of values for the range compare test.

26. (Previously Presented) A computer readable medium containing program instructions for optimizing leaf comparisons from a tree search of data stored in a tree structure within external memory of an embedded processing system, the program instructions comprising instructions to:

provide a control structure for leaf data comparisons, the control structure including as a control vector and a match key, the control vector indicating a type of comparison test to be performed on the match key; and

store the control structure including the control vector and the match key within a leaf of the tree structure.

27. (Previously Presented) A computer readable medium containing program instructions for optimizing leaf comparisons of a tree search, the program instructions comprising instructions to:

store leaf data in a leaf of a tree structure in external DRAM of an embedded processing system;

organize the leaf data within fixed size blocks of memory in the external DRAM as a control vector and match key; and

utilize the control vector to indicate a type of comparison to be performed on the match key within the leaf data by a tree search engine of the embedded processing system.

28. (Previously Presented) The method of claim 1, further comprising:

performing the type of comparison test indicated by the control vector on the match key during a tree search of data stored in the tree structure.